

ABSTRACT OF THE DISCLOSURE

A G sensor 31 generates a measuring value by measuring an impact acceleration applied to a vehicle. An A/D converter 32 converts the measuring value into a digital value with a resolution of K bits. A transmission interface 33 compresses the digital value into a compression digital signal of L bits being smaller than K bits. When the digital value is outside a given range from $(2^K - 2^L)/2$ to $(2^K + 2^L)/2$, the compression digital signal is generated by dividing the digital value by $2^{(K-L)}$. When within the given range, the compression digital signal is generated without dividing the digital value. The compression digital signal corresponding to the digital value within the given range thereby maintains the resolution of K bits. Thus, even using the single G sensor, a resolution of a compression digital signal can be varied based on a low or high intensity level of G.